CLAIMS

What is claimed is:

1. A system for detecting physiological stress in a subject, the system comprising:

5   a processor adapted to receive an image of the subject from a camera, adapted to identify a first spectral characteristic of the subject when the subject is unstressed and adapted to identify a second spectral characteristic of the subject when stressed, and,

the processor further adapted to compare an area of the image with the 10 first and the second spectral characteristics and adapted to indicate whether the subject is experiencing physiological stress based on which of the spectral characteristics the image more closely coincides with.

2. The system according to claim 1, the second characteristic further comprising being coincident with one of a spectrum of sub-dermal blood 15 flow and a spectrum of dermal hydration, whereby the second characteristic indicates a blush.

3. The system according to claim 1, wherein the first and the second spectral characteristics differ at a frequency selected from the group 20 consisting of about 542 nanometers, about 560 nanometers, about 576 nanometers, about 1400 nanometers, and about 1700 nanometers, and whereby the difference indicates a blush.

25   4. The system according to claim 1, the processor coupled to the camera.

5. The system according to claim 1, wherein the processor is coupled to an alarm and activates the alarm if the area of the image more closely 30 coincides with the second spectral characteristic.

6.   The system according to claim 5, wherein the processor is coupled to a time source, a date source, and a location source to enable the processor to associate the time, date, and location with the image.

7.   The system according to claim 5, the wherein the system is installed in one of an airport, an interrogation room, and a store.

8.   The system according to claim 1, wherein the processor identifies the first spectral characteristic from the image to detect an unstressed condition of the subject in real time.

9.   The system according to claim 8, wherein the processor is adapted to identify the first spectral characteristic from a back of the hand of the subject.

10.   The system according to claim 1, wherein the processor identifies the second spectral characteristic from the image to detect a stressed condition of the subject in real time.

11.   The system according to claim 10, wherein the processor identifies the second spectral characteristic from a palm of the hand of the subject.

12.   A method for detecting physiological stress of a subject, the method comprising:

observing an image of the subject with a system, the subject to include a first spectral characteristic when the subject is unstressed and a second spectral
5   characteristic when the subject is stressed;

comparing an area of the image to the first spectral characteristic with the system;

comparing the area of the image to the second spectral characteristic with the system; and
10   determining with the system which of the spectral characteristics the area of the image more closely coincides with to detect if the subject is experiencing stress.

13.   The method according to claim 12, further comprising
15   selecting the second spectral characteristic from the group consisting of a spectrum of sub-dermal blood flow and a spectrum of dermal hydration and wherein the second spectral characteristic indicates a blush.

14.   The method according to claim 12, wherein the comparisons
20   further comprise comparing the image with the first and the second spectral characteristics near a frequency selected from the group consisting of about 542 nanometers, about 560 nanometers, about 576 nanometers, about 1400 nanometers, and about 1700 nanometers to determine a difference indicative of a blush of the subject.
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15.   The method according to claim 12, further comprising coupling a camera to the system whereby the camera inputs the image to the system.

30   16.   The method according to claim 12, further comprising activating an alarm if the area of the image more closely coincides with the second spectral characteristic than the first spectral characteristic.

17. The method according to claim 16, further comprising associating a time, a date, and a location with the image.

18. The method according to claim 16, further comprising installing the system in one of an airport, an interrogation room, and a store.

19. The method according to claim 12, the method further comprising identifying the first spectral characteristic from the image in real time.

20. The method according to claim 19, the method further comprising identifying the first spectral characteristic from a back of a hand of the subject.

21. The method according to claim 12, further comprising identifying the second spectral characteristic from the image in real time.

22. The method according to claim 21, further comprising identifying the second spectral characteristic from a palm of a hand of the subject.

23.   A system for detecting physiological stress in a subject, comprising:

a processor adapted to receive an image of a subject and adapted to identify a first and a second area of skin of the subject, the first area to be unlikely

5   to blush, the second area to be likely to blush, and

the processor further adapted to compare the first and the second areas of skin and adapted to indicate whether the subject is experiencing physiological stress based on an attenuation at a pre selected frequency of a spectrum between the first and the second areas of skin.

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24.   The system according to claim 23, wherein the attenuation is representative of a change in one of a spectrum of sub-dermal blood flow and a spectrum of dermal hydration and wherein the attenuation indicates a blush.

15   25.   The system according to claim 23, wherein the attenuation occurs near a frequency selected from the group consisting of about 542 nanometers, about 560 nanometers, about 576 nanometers, about 1400 nanometers, and about 1700 nanometers, whereby the difference indicates a blush.

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26.   The system according to claim 23, wherein the processor activates an alarm if the comparison indicates a blush.

27.   The system according to claim 26, wherein the processor

25   associates a time, a date, and a location of the subject with the image.

28.   The system according to claim 26, wherein the system is installed in one of an airport, an interrogation room, and a store.